



State of Ohio Environmental Protection Agency

Southwest District Office

401 East Fifth Street
Dayton, Ohio 45402-2911
(513) 285-6357
FAX (513) 285-6249

1570

798

George V. Voinovich
Governor

6446.6

July 6, 1998

RE: DOE FEMP
COMMENTS: SITEWIDE
EXCAVATION PLAN APPENDIX G

Mr. Johnny Reising
U.S. Department of Energy, Fernald Area Office
P.O. Box 538705
Cincinnati, OH 45253-8705

Dear Mr. Reising:

As discussed in Ohio EPA's June 19, 1998 conditional approval letter for the SEP, attached are Ohio EPA comments on Appendix G of the SEP. Resolution and incorporation of these comments was a condition for Ohio EPA approval of the SEP. Ohio EPA recommends submittal of draft responses prior to finalizing the SEP.

If you have any questions, please contact me at (937) 285-6466.

Sincerely,

Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

cc: Jim Saric, U.S. EPA
Terry Hagen, FDF
Ruth Vandergrift, ODH
Mark Shupe, HSI GeoTrans
Francie Barker, Tetra Tech EM Inc.
Manager, TPSS/DERR,CO

Q:\femp ou5\SEPapG.WPD



Ohio EPA Comments on
SEP Appendix G

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-1 Line #: 18 Code: E
Original Comment #
Revise "...contamination in consistent with..." to "...contamination inconsistent with..."

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-2 Line #: 10 Code: C
Original Comment #
The portion of the referenced sentence following the word "and" is unclear and should be clarified or deleted. It is not evident how the number of samples could or could not be related to "the sample's physical size."

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-3 Line #: 4 Code: C
Original Comment #
A figure should be included to show the power curve and how the upper and lower bounds of the gray region relate to the FRL. In addition, for consistency with the rest of text, the term "gray region" should be used instead of "gray area."

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-4 Line #: 19 Code: C
Original Comment #
The statement is made that "error probabilities were considered for this analysis to demonstrate the variation of sample population with the Type II Error probability" but no indication is given as to what the results of this analysis were. As a result the text appears to be incomplete. The results of the analysis should either be summarized at this point in the text or the reader should be referred to Section G.2.4 and Tables G-6 through G-8 which seem to pertain to the referenced analysis.

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-5 Lines#: 6 and 12 Code: C
Original Comment #
The creation of a "remnant data set" by filtering and deleting all COC results greater than 2x and 3x the FRL assumes a 100 percent success rate in identifying and excavating hotspots. This assumption is unrealistic and non-conservative for estimating a reasonable standard deviation for sample size calculations. To lend credibility to the analysis presented, the sensitivity of the calculations should be investigated by assuming more reasonable potential hotspot removal rates. For example, what sample sizes are calculated if we assume a 90, 80, or 70 percent success rate (i.e., leaving 10, 20, and 30 percent of the COC results > 2x and > 3x the FRL, respectively)?

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.

Ohio EPA SEP App. G Comments

July 6, 1998

Page 2

Section #: Appendix G Pg #: G-6 Line #: 22 Code: C
Original Comment #

The text indicates that the data with nondetect levels up to 50 percent will be examined for symmetry. It is unlikely that data sets with such potentially high levels of nondetect values could be symmetrical, particularly in the case of an organic COC which would be expected to generally have the same detection limit for all samples. Samples with nondetect levels approaching 50 percent are unlikely to be symmetrical and are, therefore, not appropriate for analysis using the Wilcoxon Signed Rank Test. The text should be revised to provide assurances (beyond simple visual inspection of the data for symmetry) that this test will be appropriately applied.

Commenting Organization: OEPA Commentor: HSI GeoTrans. Inc.
Section #: Appendix G Pg #: G-7 Line #: 6 Code: E
Original Comment #

It is unclear given how the text is written which of the preceding authors concluded that the omnibus Shapiro-Wilk Test was almost always superior to other tests.

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-9 Line #: 3 Code: E
Original Comment #
Revise "...the confidence level on test..." to "...the confidence level on the test..."

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-9 Line #: 4 Code: E
Original Comment #
Revise "...greater than 50" to "greater than 50."

Commenting Organization: OEPA Commentor: HSI GeoTrans. Inc.
Section #: Appendix G Pg #: G-9 Line #: 11 Code: E
Original Comment #
Revise "...method withstanding wide data variations..." to "method withstands wide data variations."

Commenting Organization: OEPA Commentor: HSI GeoTrans. Inc.
Section #: Appendix G Pg #: G-12 Lines#: 17 and 26 Code: C
Original Comment #

Data sets with nondetect levels approaching 50 percent will not be appropriate for the Wilcoxon Signed Rank Test because these data sets will nearly always be asymmetrical. The text should provide assurances (beyond simple visual analysis of the data for symmetry) that the Wilcoxon Signed Rank Test will be appropriately applied.

Ohio EPA SEP App. G Comments
July 6, 1998
Page 3

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-14 Line#: 10 Code: C
Original Comment #

The text indicates that a sensitivity analysis of a range of Type II Errors was conducted but does not summarize the results of this analysis or justify its relevance. The text should be revised to include a discussion of the results of the Type II Error analysis alluded to in the referenced text.

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-16 Line#: 10 Code: C
Original Comment #

An example *a posteriori* calculation should be included in Appendix G for a data set analyzed using the Student t-Test.

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-18 Line#: 3 Code: C
Original Comment #

It is unclear what is meant in the referenced text by "sample population."

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-18 Line#: 20 Code: E
Original Comment #

Revise "...for primary COCs was actual down..." to "...for primary COCs was actually down..."

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-19 Line#: 20 Code: C
Original Comment #

The meaning of "release criteria" in the referenced text is not clear. "Cleanup goals" or "remediation criteria" may be more appropriate.

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-21 Line#: 22 Code: E
Original Comment #

This sentence requires rewording. "Measurably elevated" refers to the concentration levels of radionuclides, not the area of soil containing radionuclides.

Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Appendix G Pg #: G-22 Line#: 13 Code: E
Original Comment #

Revise "...supplemented be discrete..." to "...supplemented by discrete..."

Ohio EPA SEP App. G Comments
 July 6, 1998
 Page 4

Commenting Organization: OEPA	Commentor: HSI GeoTrans, Inc.	
Section #: Appendix G	Pg #: G-23	Line#: 12
Original Comment #		Code: C

For areas greater than 10 m², the correct hotspot criterion is two times the FRL.